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REPORT
TO THE
BOARD OF SUPERVISORS
OF THE
CITY AND COUNTY OF SAN FRANCISCO

REVIEW OF THE OPERATIONS
OF THE
SAN FRANCISCO AUTOMOTIVE FLEET
AND THE CENTRAL SHOPS DIVISION
OF THE PURCHASING DEPARTMENT

Bureau of the Budget

BUDGET ANALYST
FOR THE
SAN FRANCISCO BOARD OF SUPERVISORS
JULY, 1979

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CITY AND COUNTY OF SAN FRANCISCO

BOARD OF SUPERVISORS
BUDGET ANALYST
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July 11, 1979

Honorable Carol Ruth Silver, Chairperson, and
Members of the Finance Committee
Board of Supervisors
Room 235, City Hall
San Francisco, California 94102

Dear Madam Chairperson and Members:

Transmitted herewith is our management audit report on the operations of the San Francisco automotive fleet and the Central Shops Division of the Purchasing Department.

The Central Shops are administered by the City Shops' General Superintendent under the general direction of the City Purchaser. The Central Shops' staff provides mechanical maintenance and repair service for all City vehicles and equipment except for vehicles operated by the City's utilities. The Superintendent of Central Shops makes recommendations on vehicle replacement policies and is responsible for the inspection and preparation of new vehicles prior to assigning them to the respective departments.

The Central Shops includes 5 facilities located in various parts of the City. The largest facility is the Quint Street Corporation Yard containing the Auto and Light Truck Shop, the Heavy Truck and Equipment Shop, and the Fire Apparatus Shop. These shops are the central maintenance facilities for the City's automotive fleet. Also at the Quint Street Corporation Yard are the following 6 auxiliary units: the Electric Shop, the Machine Shop, the Upholstery Shop, the Pattern and Ladder Shop, the Paint Shop, and the Blacksmith Shop. The other four Central Shops facilities are the Golden Gate Park Shop, the Hall of Justice Service Station, the Department of Public Works Army Street Yard, and the 19th Avenue Public Works Station.

Funding for Central Shops comes through work orders from the various City departments, the San Francisco Unified School District, and the San Francisco Community College District. For the 1978-79 fiscal year, the Central Shops' budget was $3,317,481. For the 1979-80 fiscal year, Central Shops' budget totals $3,344,175, an increase of $26,694 (0.8%) from the 1978-79 fiscal year.

In the 1978-79 fiscal year, the Central Shops maintained and operated 875 automobiles, 519 vans and trucks, 278 ambulances and motorcycles, and 1,283 units of special equipment. The automobiles operated in the City's General Fleet, which we analyzed in detail, numbered 429 in 1977-78. The City's General Fleet excludes Police, Fire, Airport, Port, Water, Hetch Hetchy and Municipal Railway automobiles.

The lack of reliable data was a problem throughout our review of City vehicle and Central Shops operations. For example, vehicle inventory figures and vehicle maintenance and repair information were found to be inaccurate and contradictory. However, for 1979-80, the Purchaser has budgeted $35,000 for an Automated Cost Accounting and Recording (ACAR) system . ACAR is a computerized program which is designed to include a detailed information reporting system enabling Central Shops personnel to make management decisions ultimately improving maintenance and repair services, maximizing vehicle utilization, and improving the current work order system of billing. The ACAR system is designed to provide an accurate vehicle inventory including the status of all vehicles in that inventory so that all of the Purchasing Departments divisions can utilize the same identification and numbering system. The information system is designed to assure that the proper departments will be billed for services performed on their vehicles and to prevent the inaccurate billing that occurs with the current manual billing system.

Staffing levels at Central Shops have increased little over the past 10 years. Between 1968 and 1978, the number of units of equipment maintained by Central Shops' staff increased by 43% from 2,095 units to 2,991 units. During the same period, the Central Shops' staff increased by 6%, from 85 employees in 1968 to 90 employees in 1978. In 1968, Central Shops' staffed one employee for 24.6 units of equipment, and in 1978, staffed one employee for every 33.2 units of equipment. The cost of Central Shops operations has been a contributing factor towards the relatively low cost of owning and operating City automobiles--41% below the national average as reported by the American Automobile Association from 1978 national average costs.

The City maintains its automobiles for 10 years or more. Because of this longer retention, the City's average fixed costs are lower than the national average and the City's variable costs are higher than the national average. The City trades a lower fixed cost rate for a higher variable cost rate by retaining City cars for more than 10 years. Although it costs more to maintain an older car, the total cost to the City is less than it would be if the City cars were replaced more frequently. This relatively low operating cost, however, is accompanied by relatively poor vehicle performance.

This report identifies a number of management deficiencies and procedural shortcomings which need improvement. We have recommended specific measures to be taken to correct these management deficiencies and procedural shortcomings. These recommendations include additional costs of $22,453 annually that we believe should be incurred. The full and proper implementation of the recommenations contained in this report will result in:

- A 25% reduction in the number of automobiles in the City fleet.

- A better maintained and safer vehicle fleet and improved security measures.
- Increased efficiency of City operations.
- Annual savings of $467,058.
- Onetime savings of $497,106.

A summary of our findings and recommendations is as follows:

Carpooling

28% of the City's automobiles are driven less than 7,000 miles per year at a cost exceeding 18¢ per mile. A more efficient utilization policy would allow the City's fleet to be reduced by 60 vehicles at a savings of $288,910. We found that:

- During the 1977-78 fiscal year, 119 out of 429 City automobiles were driven less than 7,000 miles on City business. The costs of operating these 119 vehicles exceeded 18¢ per mile, the rate at which the City reimburses its employees for using personal vehicles on City business. Generally, a car has a low annual mileage because it is not used frequently. When a car is not being used by the person or department it is assigned to, it could be used by others. If the departments would share the use of their cars, they could increase the use of each vehicle and thereby reduce the number of cars required.

- A car pool system will generally make more automobiles available to those agencies participating in the car pool. For example, a department which now has two cars would, in a car pool as we propose, have access to as many as 94 automobiles. However, there may be times, during peak demand, when a car from the pool might not be available to the agency which now has continuous access to two vehicles. Should a vehicle not be available from the car pool, employees may have to sacrifice the convenience of the exclusive use of a City automobile and share a ride, take Muni, or use a personal car.

- In the City Hall area, pooled automobiles can be kept in the 50-space garage underneath the building occupied by the Department of Public Health. The 14 departments using facilities in and about City Hall can share their automobiles. Nine other departments can share automobiles within their own operations. Currently the various City Hall departments operate 123 automobiles. Forty-five of these 123 autos are driven less than 7,000 miles per year and thereby costs over 18¢ per mile to operate on an average basis. If City Hall departments would share their cars, the City Hall fleet could be reduced by 29 cars, with 94 cars remaining in the City Hall fleet. Departments outside of City Hall could reduce their fleet by more actively sharing their cars and by eliminating low mileage/high cost cars. If these departments would share their cars, their fleets could be reduced by 31 cars.

- Various objections to using the Public Health building garage for a carpool were made by City officials. These objections included capacity limitations and possible fire hazards. In our judgment none of the objections cited would preclude the initiation of a carpool if this concept has the support of the responsible officials in charge.

Based on these findings, we recommend that:

- The various San Francisco departments share the use of their cars.
- The City Purchaser, under Section 4.12 of the Administrative Code, establish, maintain, and operate a City Hall automobile pool and assist the various departments with the internal organization of motor pools within each department in order that the City fleet be used more efficiently.

City Auto Rental

The present management/accounting system does not adequately assign responsibility and control of the City's automobile fleet. A centrally managed fleet, rented to the various departments, would fix the responsibility and provide the authority for the control of the automobile costs. We found that:

- Responsibility for the condition of the City's automobile fleet is not fixed.
- The condition of the automobile fleet is dependent on a department's usage of its vehicles, the department's ability to adequately justify sufficient maintenance funds, and the approving authority's willingness to provide the necessary funds for vehicle maintenance each year. The amount of repair and maintenance done on City vehicles is oftentimes determined according to the availability of departmental funds instead of the actual need for vehicle repair and replacement. The responsibility for deciding the time and extent of a repair is divided between the operating department and the Central Shops.
- A rental system for City-owned vehicles would provide a mechanism by which problems with vehicle operation and maintenance could be identified and brought to the Chief Administrative Officer's attention. If the rental rate charged by Central Shops for each vehicle exceeded the rental rates for automobiles available from private commercial agencies, the City, under Charter Section 8.300-1 (Proposition J), could eliminate the appropriate positions at Central Shops, sell its automobiles, and enter into a long-term contract with the private agencies for autos at a lower rental rate.

Based on these findings, we recommend that:

- The Board of Supervisors request that the Chief Administrative Officer initiate the implementation of an automobile rental system.
- The Chief Administrative Officer request authorization and appropriation of funds for an Assistant Superintendent Fleet Manager position in the Purchaser's Central Shops.
- The Board of Supervisors delete the position of Fleet Superintendent in the Police Department's 1980-81 budget.

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Self-Insure

The City should self-insure its motor vehicle fleet and save $340,758 in insurance premiums each year. We found that:

- The General Fleet has insurance coverage for claims that range from $500,000 to $10 million and is self-insured for claims below and above these amounts.

- The City has never had an accident claim in excess of $100,000 for single accidents involving a vehicle and the general fleet. Mr. Keith Grand, the City's Risk Manager, agrees that the likelihood of a claim against the City exceeding $500,000 is very remote.

- The City would have at least fifteen years to accumulate funds after an automobile accident liability was actually incurred. This time could be used to self-insure catastrophic automobile liability without a requirement of setting aside funds in anticipation of a major auto accident. Further the City has an emergency reserve fund which could be used to pay insurance claims.

- Based on our findings, including the fact that the Municipal Railway transit vehicles and the City's ambulances are entirely self-insured, we recommended during hearings on the 1979-80 City and County budget, that San Francisco self-insure its entire vehicle risk and not appropriate funds for vehicle insurance. Our recommendation was implemented by the Board of Supervisors.

Accident Prevention

The City does not have an adequate safety program which could reduce the number of its automobile accidents. A City-wide vehicle accident prevention program could save the City at least $43,300 per year. We found that:

- A City automobile safety program would entail three separate procedures. The first would be to institute a preventive maintenance system to ensure that the City's automobile fleet is safe to drive. The second program involves a safety inspection of the automobiles by drivers of those automobiles. The third program would involve defensive driver training where one employee from each of the major City departments would receive a course in defensive driver training. Each department then would have an employee able to train other employees in the skill of defensive driving. Encouraging driver safety together with well maintained vehicles has been shown to have an impact on accident rate, through a reduction in the frequency of vehicle accidents by as much as 50%.

Based on these findings, we recommend that:

- The City's Risk Manager work together with the Superintendent of Central Shops in order to initiate an effective City-wide automobile safety program.

Gasoline Security

The City's gasoline supplies are not adequately secure. The City's gas pumps should be adequately secured and accounting control procedures should be followed. We found that:

- The Central Shops operates pumps at five locations: Hall of Justice, Quint Street Station, Army Street Station, 19th Avenue Station, and the Recreation and Park Station. During fiscal year 1977-78, these five stations pumped 1,470,274 gallons of gasoline costing $700,066. The San Francisco Police Department maintains its own gas pumps at police district stations. During 1977-78, the Police Department's district stations pumped over 21,820 gallons of gasoline costing $11,782. The Water Department spends approximately $300,000 per year on gasoline pumped from the City's maintenance yard and at its facilities at Millbrae and Sunol. The Fire Department pumps approximately $130,000 worth of fuel per year from pumps located at each fire station. Thus, a total of approximately $1.1 million was spent on gasoline pumped in the 1977-78 fiscal year for approximately 60 sites. Fuel costs are rising so quickly that it is difficult to predict what next year's fuel costs will be.

- The City's fuel supplies are very accessible. Personal cars can be driven up to most City's gas pumps. For example, we drove a bright orange Volkswagen Beetle into the Public Works' Army Street compound and up to the City gas pumps there. We removed the pump nozzle and held it up against the car pretending to be filling the car with City gasoline. We then drove around the yard, up and down the lanes between the buildings. No one displayed any concern about our presence or behavior.

- The system designed to account for the City's gas is not being used.

- The City's fuel pumps have, until recently, not been inspected or certified by the City's Bureau of Weights and Measure for accuracy. In November, 1978, Central Shops' four pumps were inspected. However, none of the other City fuel pumps have been inspected. Thus, the accuracy of their meter readings is questionable. Dipstick readings used to measure the amount of gasoline remaining in the gasoline storage tanks are taken by station attendants who also pump and record the gasoline delivered to each car. Thus, one person has control of both sides of the account. Accounting control would increase if the person outside of the operation of the gasoline stations took dipstick readings.

- The inadequacy of internal controls and security of the distribution of the City-owned gasoline has created an opportunity for theft of gasoline from the City pumps.

Based on these findings, we recommend that:

- The City departments operating gasoline pumps take the following actions:

    1. Prohibit privately-owned vehicles from entering City facilities that have operating gasoline pumps.

2. Institute strict accounting control procedures for the dispensing of City gasoline.

3. Have the City fuel pumps inspected and certified for accuracy.

City Cars Driven Home

City vehicles should not be driven to employee's homes for overnight storage, saving approximately $73,000 per year. We found that:

- From our survey of a sample of City automobiles in the City's General Fleet, we estimate that the total additional mileage accumulated on all City vehicles while being driven home for overnight storage approximates 478,836 miles per year. Using the average cost of operation of 15.4¢ per mile for all 429 City automobiles in the City's General Fleet during 1977-78, employees driving City cars for the purpose of commuting to and from work cost the City at least an additional $73,000 per year.

- Based on these findings, we recommend that the Board of Supervisors amend the Administrative Code of the City in order to establish regulations restricting employees from driving City vehicles home.

Performance Standards

The performance of Central Shops mechanics should be measured against accepted industry standards. We found that:

- The current methods used by Central Shops to account for mechanic's work do not provide the necessary information which can be used to compare a mechanic's performance to automobile repair industry standards.

- The mechanics employed by Central Shops charge their time to a specific vehicle. However, we witnessed mechanics working on several vehicles simultaneously, moving from one vehicle to the next, and several mechanics working on one vehicle.

- Mid-day breaks and idle time between repairs are included in the vehicle repair time and charged to the departments.

- Not being able to determine the exact nature of the work performed, together with the inaccuracy of the time recorded for the work, makes it difficult to judge performance of the Central Shops' mechanics against other competitive shops for a comparable work product.

Based on these findings, we recommend that:

- The Superintendent of Central Shops use generally accepted performance standards, such as those contained in flat rate manuals, to judge the productivity of the Central Shops automobile mechanics.

Reducing Downtime

The City automobile fleet experiences an average of 14% downtime. Installing systems of preventive maintenance and inspection, scheduled repair and quality control would reduce this excessive downtime, saving $176,514 in vehicle replacement costs. We found that:

- According to automotive fleet management experts, vehicles should not experience over 5% downtime annually for service and repair. Downtime is the time a vehicle is out of service for maintenance. We conducted a survey of vehicle usage during August and September, 1978, in which every City driver maintained a log of their usage of City cars. In reviewing the results of our survey, 258 vehicles of the 429 sampled provided us with usable downtime data. We found that during August, 1978, these 258 vehicles experienced an average of 14% downtime. We estimate that the 14% downtime is a minimum average rate because we did not calculate downtime for any vehicle beyond the reporting period.

- In reviewing individual department fleet downtime, we found that, in the Department of Social Services, 39 automobiles experienced a 53% downtime rate or an average of 12.1 days out of 23 days surveyed. The time used to complete repair sevices for the Department of Social Services vehicles included 14 days to repair a window, 18 days to repair a horn, 4 to 6 days to complete a routine tune-up, 10 days to repair a radiator, and 23 days to service and repair a manual transmission.

- Repairs conducted on police vehicles are routinely given priority over the repair of other City cars. Therefore, the rate at which police cars are out-of-service for repairs should be the lowest downtime rate for all the City's fleet. We analyzed the Police Department's vehicle availability records and found police vehicles were down 9% of the time over a nine-month period from October, 1977, to July, 1978. This rate is nearly twice the average rate (5%) which is standard for vehicle fleets.

- Reducing the downtime rate from 14% to 5% would reduce the number of vehicles required for City departments by 39 automobiles. As the size of the City fleet is reduced, the backlog of vehicles to be repaired should be minimized, and the scheduled preventive maintenance program would be more easily implemented.

Based on these findings, we recommend that:

- The Central Shops take the following actions:

  1. Institute a mandatory vehicle maintenance and inspection procedure conforming to the manufacturer's recommendations.

  2. Institute a work scheduling and appointment procedure.

  3. Institute a quality control system.

4. Establish a performance standard whereby City vehicle downtime would be maintained below 5%.

5. Eliminate 39 vehicles from the City fleet through attrition as the recommendations above are implemented.

Out-of-City Driving

City employees are reimbursed at 18¢ per mile for using privately-owned automobiles on out-of City trips on official business. If City autos were used, the City could save over $10,000 per year. We found that:

- During 1977-78, the average City auto needed to be driven at least 25 miles per day in order for the operating costs to equal the cost of reimbursing an employee for the use of a private automobile at 18¢ per mile. Therefore, any City vehicle driven less than an average of 25 miles per day is not economical to operate.

- It is difficult for a City employee to drive a car over 25 miles in a day, staying within the City limits and still be able to get the required City work done. On the other hand, it is difficult for an employee to have an appointment beyond the City limits and return without driving 25 miles. If the City's automobiles were used rather than privately-owned cars for out-of-City trips, the City would have been able to save $10,846 in the 1977-78 fiscal year.

Based on these findings, we recommend that:

- The Board of Supervisors amend Article IV, Chapter 10, of the Administrative Code to prohibit the authorization and compensation for the use of privately-owned vehicles outside the limits of the City and County of San Francisco unless a City car is unavailable.

- Departmental managers encourage their employees to use privately-owned automobiles for official business within the City.

The Purchaser's response to this management audit is on page 39. The response states that the Purchasing Department has "grave concerns" with some of the conclusions stated in our report. We contacted the Purchaser in order to inquire as to the exact nature of these concerns and were told that he had not had sufficient time to develop them. We asked if there were particular sections of the report with which he disagreed or particular facts that are in error. His response was that he had not had sufficient time to review the report carefully. The Purchaser received a copy of the report on June 19, 1979 and his response was received on June 29, 1979.

Respectfully submitted,

Harvey M. Rose

HARVEY M. ROSE
Budget Analyst

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Supervisor Lau
Supervisor Pelosi
Supervisor Renne
Mayor Feinstein
Chief Administrative Officer
Purchaser
Central Shops General Superintendent
Controller
City Attorney
General Manager, Personnel, Civil Service
Rudy Nothenberg
All City Departments

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INTRODUCTION

Pursuant to the direction of the Finance Committe of the Board of Supervisors, the Budget Analyst conducted a management audit of the Purchasing Department's Central Shops' operations. We reviewed systems in the maintenance, repair and management of City automobiles in the City's General Fleet which we define as all City automobiles with the exception of the vehicles operated by public safety departments, Police and Fire, and by City public enterprise departments such as the Port, Airport, Water Department, Hetch Hetchy and the Municipal Railway.

Methodology

In conducting the management audit, we made use of a wide variety of informational sources. We utilized data from a vehicle usage survey conducted by the Mayor's Office in May, 1978. We conducted an additional vehicle usage survey during September and October, 1978. We reviewed neighboring jurisdictions' fleet management practices and maintenance facilities. We researched and analyzed various computerized information systems available. We reviewed and studied existing reports on fleet management systems and attended a fleet management seminar in order to obtain a comparative view of vehicle fleet operations. We discussed the concept and methodologies of internal vehicle rental systems with the Purchaser and the City Shops General Superintendent. We interviewed key personnel at Central Shops and visited all facilities within its operations. We accumulated data on all costs pertaining to the operation of each passenger vehicle, and determined a cost per mile rate for each vehicle. We examined the reimbursement vouchers for employees use of personal cars, and compared in-City driving costs to out-of-City driving costs. Our management audit is the product of these studies. Implementation of our recommendations will result in better managed and more cost effective City fleet and Central Shops operations.

Central Shops' Responsibility

The staff of the Central Shops' facilities provides mechanical maintenance and repair services for all City vehicles and equipment except for the vehicle fleets operated by the City's utilities. Central Shops' administrative personnel are also responsible for the Central Shops' internal budgets, staffing levels, and the rate charged to the departments for repair work performed. The Superintendent of Central Shops makes recommendations on vehicle replacement policies, and is responsible for the inspection and preparation of new vehicles prior to assigning them to the respective department.

Central Shops' Divisions

Central Shops' facilities include:

- Quint Street Corporation Yard containing the Auto and Light Truck Shop, Heavy Truck and Equipment Shop, and Fire Apparatus Shop. These shops are the central repair facilities for the City's automotive fleet. Also at the Quint Street Corporation Yard are the following six auxiliary units:

Electric Shop repairs, maintains and installs automobile electrical equipment and other electrical equipment and power tools.

Machine Shop repairs and maintains a wide range of tools, pumps, boilers and other machines for the City, the Unified School District, and the San Francisco Community College.

Upholstery Shop repairs auto seats, bed covers, and leather straps and covers.

Pattern and Ladder Shop is a woodworking facility specializing in the repair of Fire Department Ladders and the construction of unique patterns used for the manufacture of special pumps and impellers for the Fire and Water Departments.

Paint Shop paints the City's vehicles and other equipment.

Blacksmith Shop manufactures and repairs small tools and parts for the automotive equipment shops and the Machine Shop.

- Golden Gate Park Shop provides fuel, lubricants and routine maintenance for Recreation and Park Department vehicles and equipment.
- Hall of Justice Service Station provides routine maintenance on Police Department vehicles, minor repairs on Police Department vehicles, and fuel and lubricants for all City vehicles.
- Department of Public Works Army Street Yard provides fuel, lubricants and preventive maintenance on Public Works vehicles.
- 19th Avenue Public Works Station also provides fuel, lubricants and preventive maintenance on Public Works' vehicles.

Central Shops' Staff

The positions within the Central Shops budget include:

1 City Shops General Superintendent
1 City Shops Asst. Superintendent
1 Management Analyst (budgeted to start 1/1/80)
1 Sr. Accountant
1 Sr. Account clerk
1 Account Clerk
1 Sr. Payroll and Personnel Clerk
1 Clerk Typist

Crafts

1 Automotive Mechanic Assistant Superintendent
1 Automotive Mechanic Supervisor
11 Automotive Mechanics
1 Automotive Service Worker Assistant Supervisor
25 Automotive Service Workers
3 Automotive Machinist Supervisors
2 Automotive Machinist Assistant Supervisors
27 Automotive Machinists
3 Automotive Body and Fender Workers
4 Auto Painters
1 Maintenance Machinist Supervisor
9 Maintenance Machinists
4 Metalsmiths
2 Pattern Makers
1 Upholsterer

(See Central Shops Organization Chart, attached on p. 38.)

Central Shops Budget Summary

In 1978-79 fiscal year, the Central Shops total budget was $3,317,481. The Central Shops is funded through work orders, from the various City departments, the San Francisco Unified School District and the San Francisco Community College.

For the 1979-80 fiscal year, Central Shops' budget totals $3,344,175, an increase of $26,694 (0.8%) from the 1978-79 fiscal year.

The San Francisco Vehicle Fleet

In the 1978-79 fiscal year, Central Shops maintained 2,961 City-owned vehicles and equipment. This figure represents 875 passenger vehicles, 278 motorcycles and ambulances, 519 vans, pick-up trucks, small and large trucks, fire equipment, and 1,283 heavy equipment such as compressors, generators, fork lifts, and similar apparatus. A schedule of the size and breakdown of the City fleet is attached on page 36. The automobiles operated in the General Fleet, which we analyzed in detail, numbered 429 in 1977-78.

Central Shops' Information and Accounting System

The lack of reliable data was a problem throughout our review of City vehicle and Central Shops' operations. For example, in examining the San Francisco vehicle inventory, we found that the Central Shops' vehicle inventory differs from the Purchasing Department's Central Warehouse inventory. (The Central Warehouse maintains inventory on all City property.) At the end of the 1977-78 fiscal year, the Central Warehouse inventory included 96 vehicles that were not included in the Central Shops inventory. We were unable to reconcile this difference in inventory because the Central Warehouse staff identifies City vehicles by using license plate numbers while Central Shops' staff uses vehicle numbers for identification.

In examining maintenance and repair costs on the 429 vehicles in operation during the 1977-78 fiscal year, we found that 27 vehicles (6%) were identified incorrectly on the monthly Maintenance and Repair Summary. This summary is the source document used to bill departments for maintenance and repair of City vehicles. The error resulted in $4,932 of improperly billed accounts. It is difficult to verify whether work orders that are billed to departments are appropriately assigned to the vehicles repaired if the departments do not question the fees for for services rendered. The 6% error was found by questioning repair charges on vehicles that were not found in the Central Shops' inventory. (None of the errors found were ever questioned by department personnel even though the services were given to vehicles for which the departments had no responsibility.) The vehicle inventory is updated periodically. However, there is no follow-up or status report on vehicles that are turned in as surplus or omitted from the city fleet inventory. We found that some vehicles that have been turned in by departments to be sold, scrapped, or scheduled for repair cannot be readily accounted for.

New Data Collection Procedures

The Purchaser has budgeted $35,000 for an Automated Cost Accounting and Recording System (ACAR) to begin operating in the 1979-80 fiscal year. ACAR is a computerized program which is designed to include a detailed information reporting system enabling Central Shops personnel to make management decisions ultimately improving maintenance and repair services, maximizing vehicle utilization, and improving the current work-order system of billing.

The ACAR System is designed to provide an accurate vehicle inventory including the status of all vehicles in that inventory so that all of the Purchasing Department's divisions can utilize the same identification and numbering systems. The information system is designed to assure that the proper departments will be billed for services performed on their vehicles, and to prevent the inaccurate billing that occurs with the current manual billing system.

Billing and Accounting Procedures

The Central Shops' billing system currently does not furnish departments with itemized costs for labor and repair. The vehicle maintenance history cards that are kept at the Central Shops' garage do not list the prices of parts used in each repair. There is no single document that specifies the cumulative costs and repair description for any vehicle work done at Central Shops. The Hall of Justice Service Station, which is responsible for routine minor maintenance and repair of Police Department vehicles, does not have vehicle histories for maintenance and repair work done on each vehicle. It is possible that duplicative repair work is done on police vehicles because mechanics have no information on work that has already been performed at the Service Station or at Central Shops. Police Department personnel have repeatedly voiced strong criticism of the Central Shops' operation regarding the high cost of repairs and the lack of information provided for repairs performed, parts replaced, labor costs, and total repair costs on specific repair items. The ACAR system is designed to identify repairs by cause, itemize expenditures for parts, labor, fuel, and overhead, and specify total dollars spent on parts and labor for the life of each vehicle.

Central Shops' accounting personnel receive itemized gasoline and oil consumption reports every month from the City's Electronic Data Processing unit. The reports contain the following information on each vehicle that utilizes San Francisco fueling stations: department number, vehicle number, pumping station identification, type of gas and oil used, quantity of gas purchased, date of purchase, odometer reading at the time of purchase, and total cost. Information accumulated for each vehicle is summarized and the program is equipped to provide a miles per gallon for the month. This computerized system is used to bill all City departments for gasoline and oil consumption on a monthly basis.

These reports are not used for management or cost control purposes due to the poor quality of information. The Central Shop's management does not make decisions from these reports. In examining the first 150 vehicle listings on gas consumption for the month of May 1978, 112 vehicles (75%) were indicated as rejected by the computer due to illogical odometer data or insufficient information coded into the computer record. This 75% error rate demonstrates that the current reporting system is not being utilized as a control on gasoline consumption. Billing errors were also found by examining the Gasoline Summaries. Charges for gasoline purchases were billed to departments for vehicles that did not show up on the vehicle inventory at any time. The errors in billing for gas consumption are also not noticed or corrected unless a department questions a particular fee charged. Central Shops staff do not verify any charges for services rendered with the vehicle inventory, nor do they double check the EDP Maintenance and Repair Summaries or the Gasoline Expenditure Summaries with their own records before the billings are processed. After a 3-month period has elapsed, the source data compiled at pumping stations and the monthly gas consumption reports are destroyed. Consequently, Central Shops maintains no cumulative record on gas and oil consumption for any City vehicle.

The ACAR system, if provided accurate data, will enable Central Shops' management to analyze fuel consumption patterns, obtain accurate miles per gallon readings, and determine if vehicles are performing within normal gas consumption standards. Accurate fuel consumption information,if monitored properly, can also serve as an internal control.

The 1977-78 Maintenance and Repair Summary included $15,924 of indirect expenses charged to various departments that were not assigned to any vehicle number. These charges include miscellaneous parts and repair services, automobile washes, and tires. According to Central Shops' personnel, these charges can be allocated to specific departments, but not to specific vehicles. Consequently, these miscellaneous services could not be verified because an adequate and complete audit trail does not exist.

The ACAR system is designed to identify trends in indirect labor and gather all indirect labor hours and material costs (that are currently assigned as miscellaneous charges) and assign them to separate indirect accounts. This feature should upgrade workforce utilization and control unitemized miscellaneous charges.

The Central Shops' management currently does not determine cost per mile data on City vehicles. Our staff researched all costs incurred in the operation of each City passenger vehicle and manually calculated the cost. In determining cost per mile, we were able to pinpoint which vehicles are under utilized, which vehicles incur excessive repair costs, and which vehicles should be used on out-of-City trips to increase cost-effectiveness. Neither Central Shops nor other department managers consider these factors due to the lack of accurate cumulative data on each vehicle.

Central Shops maintains incomplete records on the accident rates of City vehicles. Data on accident related repair costs are not isolated or compiled to determine if these costs are excessive or in control.

Due to the aforementioned deficiencies in the Central Shops' records, the current information provided to City departments on maintenance and repair is not adequate to allow department heads to make sound management decisions on budget requests. Departments budget for maintenance and repairs according to past expenditure data provided by Central Shops.

The ACAR system is designed to increase the efficiency and effectiveness of Central Shops' operations by:

- Providing an accurate history of the costs attributed to each vehicle so that management decisions concerning the automotive fleet can be made based on accurate and complete information.

- Providing a comparison of Central Shops' budgeted costs to actual operational costs and distinguishing maintenance from operational costs.

- Providing a comparison of scheduled and non-scheduled repairs, (depending on Central Shops' acceptance of our recommendation to schedule all work, see pp. 30-32) and a comparison of preventive maintenance costs to repair costs.

- Determining down time for individual vehicles and for classes of vehicles in order to meet our recommended goal of 5% (see findings pp. 30-32) down time.

- Providing a basis for the effective utilization of vehicle maintenance staff, a productivity measurement and comparison of actual performance with industry standards.

- Determining patterns of maintenance for each vehicle and each class of vehicle to establish repair and replacement requirements and standards based on actual performance.

Cost Comparisons

Staffing levels at Central Shops have increased little over the past ten years. Between 1968 and 1978, the number of units of equipment maintained by Central Shops' staff increased by 43% from 2,095 units to 2,991 units. During the same period, the Central Shops' staff increased by 6%, from 85 employees in 1968 to 90 employees in 1978. In 1968 Central Shops staffed one employee for 24.6 units of equipment and in 1978 staffed one employee for every 33.2 units of equipment maintained.

Central Shops' operations have been a contributing factor towards the relatively low cost of operating City automobiles--41% below the national average as reported by the American Automobile Association[1] from 1978 national average costs computed by Runzheimer and Company[2].

City and National Automobile Average Costs per Mile

	City Average	National Average
Fixed Costs (purchase price and insurance based on City average of 7,604 miles per year)	\$5.97¢/mile	\$18.29¢/mile
Variable Costs (maintenance, gas, oil and tires)	10.99¢/mile	5.65¢/mile
Total Cost	\$16.96¢/mile	\$23.94¢/mile

Because these rates are for autos serving different purposes (private vs. City fleet use), conclusions drawn from their comparison should be carefully made. The national average fixed cost is based on a car traded-in for a new car after four years. The City maintains its automobiles for ten years or more. Because of this longer retention, the City's average fixed costs are lower than the national average and the City's variable costs are higher than the national average. The City trades a lower fixed cost rate for a higher variable cost rate through Central Shops' ability to sustain the life span of City cars beyond ten years. Although it costs more to maintain an older car, the total cost to the City is less than it would be if City cars were replaced more frequently.

We emphasize these positive findings in order to give a fair perspective to our management audit review. The purpose of our Management audit is to discover and recommend ways to improve the efficiency and effectiveness of the management of the City's vehicle fleet. This report reviews a number of management deficiencies and procedural shortcomings needing improvement. We have recommended specific measures to be taken to correct these management deficiencies and improve procedures. These recommendations include additional costs of $22,453 annually that we believe should be incurred. The full and proper implementation of the recommendations contained in this report will result in:

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[1] Your Driving Costs, American Automobile Association, Falls Church, Virginia, 1978.

[2] Runzheimer and Company, Runzheimer Park, Rochester, Wisconsin, is a management consulting firm whose service include statistical reports that measure the costs of transportation.

- A 25% reduction in the number of automobiles in the City fleet.
- A better maintained and safer vehicle fleet.
- Improved security measures.
- Increased efficiency of City operations.
- Annual savings of $467,058.
- Onetime savings of $497,106.

We wish to thank the Purchaser, the City Shops General Superintendent and the Central Shops' personnel for cooperating with our efforts on this management audit. We found these people to be open, cooperative and willing to help. Without their assistance, our task would have been extremely difficult.

28% OF THE CITY'S AUTOMOBILES ARE DRIVEN LESS THAN 7,000 MILES PER YEAR AT A COST EXCEEDING 18¢ PER MILE. A MORE EFFICIENT UTILIZATION POLICY WOULD ALLOW THE CITY FLEET TO BE REDUCED BY SIXTY VEHICLES AT A SAVINGS OF $288,910.

During the 1977-78 fiscal year, 119 out of 429 City automobiles were driven less than 7,000 miles on City business. Low mileage caused the cost of operating these 119 vehicles to exceed 18¢ per mile, the rate at which the City reimburses its employees for using their personal vehicles on City business. Generally, a car has a low annual mileage because it is not used frequently. When a car is not being used by the person it is assigned to, it could be used by someone else. If the departments would share the use of their cars, they could increase each vehicle's mileage and utility thereby reducing the number of cars required.

The 14 departments using facilities in and about City Hall could share their automobiles. Nine other departments could share autos within their own operations. Currently the various City Hall departments operate 123 automobiles. Forty-five (45) of these 123 autos are driven less than 7,000 miles per year and thereby cost over 18¢ per mile to operate. Sixteen (16) of the forty-five (45) are driven by Building Inspectors who cannot readily perform their duties without having the use of a car for most of the business day. If the City Hall departments shared their cars, the City Hall fleet could be reduced by the remaining 29 cars, leaving 94 vehicles remaining in the City Hall fleet (see the schedule on the next page).

A car pool system will generally make more automobiles available to those agencies participating in the car pool. For example, a department which now has two cars would, in a car pool as we propose, have access to as many as 94 automobiles. However, there may be times, during peak demand, when a car from the pool might not be available to the agency which now has continuous access to two vehicles. Should a vehicle not be available from the car pool, employees may have to sacrifice the convenience of the private use of a City automobile and share a ride, take Muni, or use a personal car. For trips less than a mile, walking is often quickest.

In the City Hall area, shared automobiles can be kept in the fifty-space garage under the building occupied by the Department of Public Health. During normal business hours, most of the shared cars would naturally be in operation away from City Hall. Thus the fifty-space garage would be more than adequate for the City Hall fleet during normal working hours. At other times, the cars can be more tightly parked in the garage using the aisles. The overflow, if any, can be stored in the City-owned lot on the corner of Polk and McAllister Streets. It is unlikely that there would be an overflow. During off-hours, the Public Health Garage can be made to accomodate eighty (80) automobiles while the City Hall shared fleet would contain 94 autos leaving 14 cars for storage at McAllister and Polk Streets. However, on any given evening, most of these 14 cars will be driven home by employees on emergency call or at Central Shops for maintenance. Should acces to the Public Health Garage become restricted or the City Hall fleet increase in size, the McAllister/Polk lot can be prepared to store fifty cars without any one blocking the other, or, up to 82 cars with blocking. The operation of the Department of Public Health garage is currently staffed by one person. Increasing the use of the facility as a center for a City Hall carpool would require an additional position for assistance. Salary and fringe benefits for an Automotive Service Worker total $16,711 per year.

City Hall Area Departments' Car Pool

City Hall Area Departments Pool	Total No. of Cars	No. of Cars With Low Mileage (-7,000) and High Cost (+18¢/mile)	1979-80 Replacement Car Requests	Price
Assessor	2	0	1	$5,400
City Attorney	2	0	1	5,400
City Planning	2	0		
Civil Service	1	1		
Controller	1	0	1	5,400
Public Administrator	3	3		
Real Estate	1	2		
Tax Collector	1	0		
Purchasing	3	1		
Architecture	8	7	4	16,920
Building Inspection	47	16	17	71,910
DPA - Gen. Office	1	1		
DPW - Personnel	3	0		
DPW - Engineering	16	2	1	4,280
Public Health	10	6		
Food and Sanitary Inspection	20	6		
Mental Health Admin.	1	1		
Board of Supervisors	1	0	1	16,550
	123	45	26	125,860
(Less) Bldg. Inspection		16		

123 less 29 = 94

The inter-departmental sharing of automobiles can be organized under the auspices of the Purchaser as provided by Administrative Code Section 4.12 which follows:

Sec. 4.12. Automobile Pool.

> Power to establish. Pursuant to the authority vested in the Board of Supervisors by the provisions of section 2.101 of the charter, there is hereby conferred upon the purchaser of supplies the power to establish, maintain and operate an automobile pool, the location of which shall be subject to the approval of the Board of Supervisors by resolution, from which there shall be made avilable to authorized officers and employees of the City and County, as needed, such vehicular passenger transportation as may be requisite for the proper performance of their official duties.
>
> Regulations. The requisition and operation of vehicles assigned to the automobile pool, and all related matters incidental to the maintenance and

operation of the pool, shall be prescribed by written regulations promulgated by the purchaser of supplies, with the approval of the Chief Administrative Officer and the Board of Supervisors.

Assignment of vehicles to pool. Vehicles now or hereafter allocated to any department of the City and County shall be transferred from the jurisdiction thereof to the jurisdiction of the purchaser of supplies for assignment to and use in the automobile pool, whenever such transfer shall be authorized and directed by resolution of the Board of Supervisors. (Ord. No. 6820 (1939), Secs. 1 to 3).

Although these provisions for an automobile pool were promulgated thirty seven years ago, they have never been implemented. Mr. Gavin, the City's incumbent Purchaser, told us that he would organize a City Hall carpool if he could find the space for one. A carpool could work well if the departments involved cooperated.

As itemized in the following schedule, departments outside of the City Hall area can reduce their fleets by more actively sharing their cars and eliminating low mileage/high cost cars.

Departmental Car Pools

	Total Number Cars	Number of Cars With Low Mileage and High Cost
Department of Public Works Pool		
R. A. P.	8	1
Building Repair	15	3
Water Pollution	4	0
Sewer Repair	6	2
Street Cleaning	6	1
Sanitary Engineering	7	2
	46	9
Department of Public Health Pool		
Food & Sanitary Insp.	9	0
Health Centers	5	2
Emergency Hospitals	2	0
Laguna Honda Hospitals	3	2
S.F. General Hospital	11	2
Mental Health	4	1
	34	7
Other Departments		
Department of Electricity	7	2
Weights and Measures	2	1
Social Services	44	3
Recreation and Park	22	5
Mayor's Emergency Service	3	2
District Attorney - Family Support Bureau	12	2

Summary of Car Pools

Carpools	Current No. of Cars	Pool No. of Cars	Not to be Replaced No. of Cars
City Hall	123	94	29
Public Works	56	47	9
Public Health	34	27	7
Electricity	7	5	2
Weights and Measures	2	1	1
Social Services	44	41	3
Recreation and Park	22	17	5
Mayor's Emergency Services	3	1	2
District Attorney - Family Support Bureau	12	10	2
Total number of cars not to be replaced			60

In the 1979-80 budget, a total of forty replacement automobiles were requested at a total cost of $196,910. Of this number, twenty-one replacement automobiles were approved. Nineteen of those automobiles were not approved based on the Budget Analyst's recommendation that the vehicles be pooled.

Various objections to using the Public Health building garage for a carpool were made by City officials. These objections included capacity limitations and possible fire hazards. In our judgment none of the objections cited would preclude the initiation of a carpool if this concept has the support of the responsible officials in charge.

CONCLUSION

28% of the City's automobile fleet is not used efficiently. The City's autos could be used more efficiently, at a lower cost-per-mile, if the use of the cars was shared more effectively. By using the City's automobiles more efficiently, the number of cars required can be reduced by 60.

RECOMMENDATIONS

We recommend that the various San Francisco departments share the use of their cars.

We recommend the Purchaser of Supplies, under Section 4.12 of the Administrative Code, establish, maintain and operate a City Hall automobile pool and assist the various departments with the internal organization of motor pools within each department in order that the City's fleet be used more efficiently.

SAVINGS

The implementation of these recommendations will save the City the replacement cost of forty (40) automotive vehicles included in the Mayor's recommended 1979-80 Budget at $196,910 and will save the replacement cost of an additional twenty (20) automobiles in 1980-81 estimated to cost $92,000 (Sub

Compact Autos @ $4,600)--total savings are $288,910. Staffing an additional Automotive Service Worker position will cost $16,711 per year.

Based on these recommendations, the Board of Supervisors' Finance Committee recommended and the Board of Supervisors approved 1979-80 budget reductions for replacement automobiles as follows:

	Mayor's Recommended Budget		Board of Supervisors Adopted Budget*		Reductions from Budget	
Auto Size	#	Amount	#	Amount	#	Amount
Subcompact	22	$93,210	11	$46,605	11	$46,605
Compact	13	70,200	7	37,800	6	32,400
Midsize	5	33,500	3	20,100	2	13,400
Totals	40	$196,910	21	$104,505	19	$92,405

*These funds are reserved pending review by the Finance Committee of this management audit report.

THE PRESENT MANAGEMENT / ACCOUNTING SYSTEM DOES NOT ADEQUATELY ASSIGN RESPONSIBILITY AND CONTROL OF THE CITY'S AUTOMOBILE FLEET. A CENTRALLY MANAGED FLEET, RENTED TO THE DEPARTMENTS, WILL FIX THE RESPONSIBILITY AND PROVIDE THE AUTHORITY FOR THE CONTROL OF AUTOMOBILE COSTS.

The responsibility for the condition of the City's automobiles is not fixed. The condition of the automobile fleet is dependent on a department's usage of its vehicles, the department's ability to adequately justify sufficient maintenance funds, and the approving authorities' willingness to provide the necessary funds for vehicle maintenance each year. The amount of repair and maintenance done on City vehicles is often times determined according to the availability of departmental funds instead of the actual need for vehicle repair and replacement. The responsibility for deciding the time and extent of a repair is divided between the operating department and the Central Shops. Thus, if an auto is not maintained properly, is down for repairs often, or is not serviceable, a conflict easily arises as to who or what causes such difficulties.

A direct effect of the diffused responsibility for vehicle maintenance is the high downtime rate for city vehicles (see our finding on maintenance procedures, pp. 30-32). Downtime is the time a vehicle is required by operations and is out-of-service for maintenance. The cost of downtime includes the cost of having available and operating a replacement vehicle, or the cost of reduced efficiency of operations by doing without a car. The costs of downtime are added to the ongoing fixed costs of owning the downed auto. Neither Central Shops' management nor the owning department's personnel are assigned the responsibility for accounting for and controlling the downtime of the City's automobile fleet.

The costs resulting from automobile accidents are also not controlled. There is no system by which automobile accident information is gathered, and there is no system which encourages City Departments to make a claim for the costs incurred with third party accidents. When vehicles are turned in for accident repairs at Central Shops, nothing is done to ensure that an accident report has been filed, or that notification of the accident has been given to the City Attorney's Office, the CAO or the using department itself. Thus, little is currently known about the City's auto accident experience and little is being done to reduce the City's accident rate.

The City's system of budgetary accounting for the costs of owning and operating automobiles makes it difficult for the Board of Supervisors to control these costs for two reasons. First, the various costs associated with vehicle operations are scattered about in the budget: auto insurance costs are in the Purchaser's budget; accident claims are paid from the Controller's funds; vehicle maintenance costs are in each department's interdepartmental transfers account; the cost of oil, fuel, and lubricants is a separate line item for each budgetary unit; for departments funded from the General Fund the costs of new and replacement vehicles may be in the Purchaser's budget or in a specific grant fund; the cost of tires and tubes is another line item for each budgetary unit. Under this system, the evaluation of an auto-related budget request is extremely difficult.

Another reason it is difficult to control automobile costs within the budget is that the largest cost of operating City vehicles is depreciation[3], an item which is not in the budget. Once an automobile has been authorized and purchased, it remains a departmental vehicle until sold. The number of vehicles operated by the departments is not in the budget and is only indicated in the budget by the operating expense items--maintenance, gas, oil, lubricants, tires and tubes.

Revising the City's budgeting/accounting system so that the City's automobiles are "owned" centrally and then "rented" to the departments would provide a mechanism for direct control of automobile usage. The responsibility for the monitoring and controlling of vehicle accident costs, automobile downtime and the condition of the City's automobile fleet would be fixed. Such a centrally controlled automobile management system would be funded from the rental fees charged to the using departments to offset the operation and maintenance costs as well as the replacement costs for the cars.

A rental fee would be determined by calculating the fee in two parts--a utilization rate and a replacement rate. The utilization rate per mile would be based on the average operating and maintenance cost for each class of automobile. This rate would include the costs of fuel, batteries, tires, parts, labor, insurance, accident claims, and a pro-rated share of the overhead costs of Central Shops. Each City department would be invoiced on a monthly basis for the rental charges as a result of its utilization of the assigned automobiles.

A replacement rate would also be invoiced to the using department on a monthly basis according to the following formula:

$$Y = \frac{X_1 - X_2}{X_3}$$

Where:

Y = Replacement Rate

X_1 = Anticipated Vehicle Replacement Cost

X_2 = Anticipated Salvage Value

X_3 = Months of Life Expectancy

Central Shops would thus accumulate a sufficient amount of monies during the lifetime of each vehicle for the purchase of a replacement. The replacement rate would be reduced if the proceeds from the auto sale were made part of these accumulated funds.

Both the utilization and the replacement rate would be set each December so that the City's Departments could include the rental and replacement rates in their budget calculations which are submitted in January. The rates would be certified by the

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[3] Depreciation is a standard accounting technique used to assign the cost of purchasing an asset over the time period in which its value is used.

Controller and approved by the Board of Supervisors. The using departments would be able to budget for estimated mileage usage instead of the current system of budgeting for maintenance, fuel, oil, lubrication, tires and replacement vehicle authorizations.

During the budget review process, the Board of Supervisors would be able to "zero base" each agency's automobile usage. In this context, zero basing would require the justification for a vehicle from the first mile to the last, every year, rather than, as it is now, requiring the justification for replacing a vehicle every five to ten years. Past vehicle mileage activity would be reviewed as evidence for future needs. Under a rental system, the Board of Supervisors would have direct control over automobile usage and costs.

The Central Shops would adjust the number of cars it has in accord with departmental rental authorizations in the budget. In other words, Central Shops would operate on a business-like basis so that it could not afford to maintain a car which was not rented. A car would have to be replaced if it were in need of repairs which could not be economically supported by its rental. If, under this rental system, the Central Shops management did not make business-like or economically sound decisions to maintain rather than to replace a vehicle, Central Shops would be faced with a funding deficiency.

Under this rental system, Central Shops managers would have to balance the costs of operating an older automobile versus replacing it prematurely and depleting funds in the replacement account before sufficient replacement payments had been made for the car. Thus, replacing one car sooner than expected would force another to be used (rented) longer than expected. The prospect of expending extraordinary repair costs for a particular car, which would deplete Central Shops' operating funds, would encourage the timely replacement of vehicles.

The City departments could better control their costs under a rental system. Each department could better define its costs because the rental rate structure would readily provide cost per mile information which is not easily extrapolated now. The vehicle cost per mile of operation is data neccessary for program budgeting in each department of the City. The cost of alternative transportation modes could be compared to the City's internal vehicle rental rate. One obvious comparison would be the City's reimbursement rate for the use of personal cars versus the City's vehicle rental rate.

Under a rental system, a department could control its vehicle usage expenditures. A department could stop paying its automobile charge if Central Shops did not provide a satisfactory vehicle, or if a vehicle was in the shops for repair too long. Central Shops would have to bear the burden of the cost of an automobile which was not rentable or not maintained efficiently. In other words, if there was dissatisfaction with the Central Shops' service, a rental system would provide the mechanism by which problems could be identified and brought to the Chief Administrative Officer's attention. If the rental rates charged by Central Shops for its vehicles exceed the rental rates for automobiles available from private commercial agencies, the City, under Charter Section 8.300-1 (Proposition J), could eliminate the appropriate positions at Central Shops, sell its automobiles, and enter into a long term contract with the agency for autos at the lower rental rate.

A reasonable standard could be established for vehicle downtime. If a vehicle is down for maintenance beyond the reasonable period, the operating agency could stop paying rent for it. This would encourage an accounting mechanism for downtime and give the responsibility for controlling the cost of downtime to Central Shops. Under such a system, the Central Fleet Manager would be required to reduce the causes of excessive downtime (such as accidents, poor maintenance procedures, and unavailability of spare parts). Again, the Central Shops would lose funds by having to maintain a car which it could not rent.

Therefore, through the economic pressures of a rental system, the responsibility for the condition of the City's automobiles would be fixed in the Central Shops. But, if an agency should abuse a vehicle--such as by carrying cargo causing the rear seat to be replaced or otherwise putting a car to a use for which it is not intended--the Central Shops would collect payment for the cost of such abuse. Thus, Central Shops would be able to control its costs.

One type of cost is difficult to control—automobile accidents and liability costs. The Central Shops would need to control these costs because the effect of excessive downtime caused by accidents would decrease Central Shops' funding--a vehicle out-of-service would not earn rental funds. The costs of insurance and auto related accident claim payments would be made a liability of the Central Shops, too. Thus, the Central Shops would be the focus for all auto related liability costs and information--accident repair, insurance payments and liability claims. If it could save money, it would then be in the best interests of Central Shops to initiate a self funding safety program--the cost of which would be appropriated from the savings from reduced accident costs. Certainly, too, automobile accident claims paid to the City would reimburse the Central Shops for accident related repair or replacement costs. This mechanisim would provide incentive for Central Shops to ensure that the City received compensation when another was at fault.

The Administrative Code gives the Purchaser the authority to operate a City-wide pool of cars as follows:

> Section 4.10-1. City-owned Vehicles; Assignment; Transfer; Inspection.
>
> (a) The purchaser of supplies is hereby authorized, subject to the approval of the Chief Administrative Officer, to: (1) assign any vehicle purchased by him pursuant to the provisions of the annual appropriation ordinance to a department head for use by his department in accordance with the provisions of section 4.10-1(b) and section 4.11 of this Code; (2) transfer any vehicle assigned to, or under the jurisdiction of, any City and County department.

Because vehicles and funds required for the operation and maintenance of the City's cars cannot be readily transferred from one department to another, it has been difficult for the Purchaser and the Central Shops General Superintendent to follow through with these Administrative Code provisions. Under a rental system, the costs to operate and maintain a car would be transferred with the car. Thus, the Purchaser would not be restricted from operating a City-wide car pooling system. Such a system would give the flexibility needed to control funds for the transfer and assignment of automobiles among the small departmental and City Hall carpools recommended in our finding concerning low mileage/high cost cars (see pp. 9-13). Automobiles could be re-assigned to meet seasonal or cyclical program needs of the City; special projects of short duration could have an automobile allocated for the limited project period. Automobile fleet management specialists[4] estimate that the efficient operation of such a City-wide auto pool will reduce the current 429 automobile requirements by at least 10%, approximately 43 autos. If our recommendations to create City Hall and departmental car pools are implemented, then at least another seven cars would be eliminated in addition to the sixty eliminated with the operation of local car pools.

The centralized automobile fleet management rental system would have other benefits for the City. A centralized fleet manager would offer fleet management expertise to the other agencies for the installation of carpool systems and vehicle utilization improvement methodologies. The rental system could be expanded to include a rental pool of the City's trucks, heavy equipment, and emergency vehicles. A centralized perspective of vehicle operations, with improved cost information and control, could stimulate and provide economic incentives for pursuing innovative techniques to increase the operational efficiency of the automotive fleet. The City Purchaser advises us that he has been advocating such a rental system for the past twelve years.

In order to assist the Central Shop's General Superintendent to organize and manage a centralized fleet rental system, an additional Assistant Superintendent position should be created. The person filling this position also would have the expertise to assist the Police Department and other departments with their fleet management and car pool operations. The Assistant Superintendent for fleet operation would replace the need for independent fleet managers in other City departments. Specifically, the Police Department's Fleet Superintendent would not be needed. The increase in salary and fringe benefits between the two positions would be $5,742 per year.

CONCLUSION

The responsibility for the management of the City's automobile fleet is not clear. The present system does not allow full control of the costs associated with the operation of the City's autos. The City automobile fleet should be managed centrally and rented to the City departments in order to fix the responsibility and provide the authority for the control of automobile costs.

RECOMMENDATIONS

- We recommend that the Board of Supervisors request that the Chief Administrative Officer initiate implementation of an automobile rental system.
- We recommend that the Chief Administrative Officer request authorization and appropriation for an Assistant Superintendent Fleet Manager position in the Purchaser's Central Shops.

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[4] Bob Edwards, Editor and Publisher, California Fleet News; State of California Fleet Administrator (Retired).
J.H. Coburn, Vice President, Gelco Leasing Company.
Ronald W. Jensen, Principle Consultant, Graves, Jenson and Associates, Equipment Management Consultants.

-We recommend that the Board of Supervisors delete the position of Fleet Superintendent in the Police Department's 1980-81 budget.

SAVINGS/BENEFIT

The implementation of these recommendations will provide for the control of automobile operations and costs. Clearly, assigning the responsibility for the management of the City's automobiles will provide impetus for cost savings heretofore absent. The operation of a City-wide automobile pool will reduce automobile requirements by at least 10% or 43 cars @ $4,526, saving $194,618; or, if our recommendations for City Hall and departmental car pools are implemented, then by at least seven cars, saving $31,682 in vehicle replacement costs. Staffing the Assistant Superintendent for fleet management position will cost an additional $5,742 per year with the deletion of the Fleet Superintendent in the Police Department.

THE CITY SHOULD SELF-INSURE ITS MOTOR VEHICLE FLEET AND SAVE $340,758 IN INSURANCE PREMIUMS EACH YEAR.

The general fleet has insurance coverage for claims that range from $500,000 to $10 million per incident and is self insured for claims below and above these amounts. Police and Fire vehicles have third party insurance coverage for a minimum of $5 million deductible to a maximum of $10 million per incident. The Municipal Railway transit vehicles and ambulances are entirely self-insured by the City.

The cost of the City's vehicle insurance is divided into three blocks.

1.	The coverage from $500,000 to $1 million costs per incident.	$148,782/yr.
2.	The coverage from $1 million to $5 million costs per incident.	77,425/yr.
3.	The coverage from $5 million to $10 million costs per incident.	98,065/yr.
	Total premium	$324,272/yr.

The City has never had an accident claim in excess of $100,000 for a single accident involving a vehicle in the general fleet. Mr. Keith Grand, the City's Risk Manager, agrees that it is unlikely that a claim against the City would ever exceed $500,000. Mr. Craig Martin, Deputy City Attorney assigned to claims litigations, states that the City would certainly contest a claim against the City exceeding $500,000. Mr. Martin states that he would expect litigation over such a claim to take at least five years before reaching trial and that, after trial, the City would be granted ten additional years in which to pay a court directed settlement. Therefore, the City would have at least fifteen years to accumulate funds after such a liability was actually incurred. The City could self-insure catastrophic automobile liability without a requirement of setting aside funds in anticipation of a major auto accident. Instead, the City need only fund the liability after it has occurred. It should also be noted that the City has an emergency reserve fund which could be used to pay insurance claims.

The various departments' budget requests for auto insurance, as recommended by the Mayor, totalled $340,758. Excluding funds budgeted by the CAO for rental vehicles, this amount exceeded the auto insurance premium requirement by $14,986.

CONCLUSION

The City can self-insure its entire automobile casualty risk without exposing itself to the threat of paying a large claim in any single year which would, in turn, interfere with the normal continuing operation of the City.

RECOMMENDATION

Based on our findings, we recommended, during hearings on the 1979-80 City and County Budget, that San Francisco self-insure its entire vehicle risk and not appropriate funds for vehicle insurance. Our recommendation was accepted by the Board of Supervisors.

SAVINGS

Implementation of this recommendation saved the City $340,758 for 1979-80 and will save increasing amounts in the future as insurance rates rise.

THE CITY DOES NOT HAVE AN ADEQUATE SAFETY PROGRAM WHICH COULD REDUCE THE NUMBER OF ITS AUTOMOBILE ACCIDENTS. A CITY-WIDE VEHICLE ACCIDENT PREVENTION PROGRAM COULD SAVE THE CITY AT LEAST $43,300 PER YEAR.

The City presently has no method to collect information regarding the cost, the severity, or the number of accidents incurred by employee use of City cars. However, Mr. Keith Grand, the City's Risk Manager, is currently developing a system for collecting such information. In the absence of such a plan, we have worked with the City's insurance brokers, Marsh and McLennon, to determine the City's approximate accident rate. From this review, we determined that during 1977, the City suffered 263 claims for automobile related accidents involving $173,131.

Marsh and McLennon's safety consultants advised us that an adequate automobile safety program could reduce accidents by 25% to 50%[5]. The average claim paid against the City in 1977 was $658, for the 263 accidents involving City vehicles. Reducing the number of accidents by 50% would save approximately $86,604 per year. Reducing accidents by 25% would save $43,341 per year.

A City automobile safety program would entail three separate procedures. The first, discussed in another of our findings (pp. 30-32), would be to institute a preventive maintenance system to ensure that the City's automobile fleet is safe to drive. The other program involves a driver-oriented safety inspection of the automobiles. This safety inspection would complement the preventive maintenance system. Each driver would inspect the City car every month and report the condition of the vehicle on a standard form. The third program would involve defensive driver training where one employee from each of the major City departments would receive a course in driver training. The cost would be $60 per person for instructor training plus the cost of materials and supplies provided by the National Safety Council. Each department then would have an employee able to train other employees in the skill of defensive driving. Encouraging driver safety together with well maintained vehicles has been shown to have an impact on the accident rate through a reduction in the frequency of vehicle accidents by as much as 50%.

CONCLUSION

The City can develop a safety program at minimal cost which would save the City approximately $43,300 per year.

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[5] Based on a 1975 study by the National Institute for Occupational Safety and Health, U.S. Department of Health, Education, and Welfare: Safety Program Practices in High Versus Low Accident Rate Companies; Alexander Cohn, Ph. D.; Michael Smith, Ph. D.; and H. Harvey Cohn, Ph. D.

RECOMMENDATION

We recommend that the City's Risk Manager work together with the Superintendent of Central Shops in order to initiate an effective City-wide automobile safety program.

SAVINGS

Implementation of this recommendation could save the City at least $43,300 per year.

THE CITY'S GASOLINE SUPPLIES ARE NOT ADEQUATELY SECURE. THE CITY'S GAS PUMPS SHOULD BE ADEQUATELY SECURED AND ACCOUNTING CONTROL PROCEDURES SHOULD BE FOLLOWED.

The Central Shops operates gasoline pumps at five locations: Hall of Justice Station, Quint Street Station, Army Street Station, 19th Avenue Station, and the Recreation and Park Station. During fiscal year 1977-78 these five stations pumped 1,470,274 gallons of gasoline costing $700,066. The San Francisco Police Department maintains its own gas pumps at police district stations. During 1977-78, the Police Department district stations pumped over 21,820 gallons of gasoline costing $11,782. The Water Department spends approximately $300,000 per year on gasoline pumped from its City maintenance yard and its facilities at Millbrae and Sunol. The Fire Department pumps approximately $130,000 worth of fuel per year from pumps located at each fire station. Thus a total of approximately $1.1 million was spent on gasoline pumped in the 77-78 fiscal year from approximately 60 sites. Fuel costs are rising so quickly that it is difficult to predict what next year's fuel costs will be.

The increasing value of gasoline makes it, for some, a commodity increasingly worth stealing and worth safeguarding from theft. The primary means to secure an item from the threat of theft is to make it inaccessible. However, the City's fuel supplies are very accessible. Our observations revealed that personal cars can be driven up to most City gas pumps. For example, we drove a bright orange Volkswagen Beetle into the Public Works' Army Street compound and up to the City gas pump there. We removed the pump nozzle and held it up against the car pretending to be filling the car with City gasoline. We then drove around the yard, up and down the lanes between the buildings. No one displayed any concern about our presence or behavior within the City facility. We observed privately-owned vehicles parked within 100 ft. of the gasoline pump at the Army Street facility. City employees can drive their personally-owned cars up to City-owned gasoline pumps at any City facility operated by any City department.

The system designed to account for the City's gas is not being used. Central Shops staff could use their Station Report form to maintain a daily record of gas kept in each tank and the amount of gas pumped. As an accounting control measure, the form provides gas consumption data that is computed in two parallel methods. Information recorded on one side of the form is based on dip stick readings taken from the gasoline pump's meter. The amount of gasoline leaving the tank each day can then be computed from two sources and compared to totals from the station attendant's log which accounts for the gasoline pumped into each City vehicle. This three-way control can be computed every day for every City pump. Significant discrepancies can be investigated by departmental account managers.

Although this is Central Shops' own form, Central Shops does not use it regularly. On the other hand, the Police Department keeps complete records of their gasoline supplies and accounts for all the gas which they pump. Any daily gasoline shortages which cannot be accounted for are investigated. Even these accounting procedures, however, have some shortcomings. One shortcoming is that the City's fuel pumps, until recently, have never been inspected or certified by the City's Bureau of Weights and Measures for accuracy. In November, 1978, Central Shops' four pumps were inspected. However, none of the other City fuel pumps have been inspected. Thus, the accuracy of their meter readings is questionable. Also, the dipstick readings used to measure the amount of gasoline remaining in gasoline storage tanks are taken by the station attendants who also pump and record the gasoline delivered to each car. Thus one person has control of both sides of the account. Accounting control would increase if a person outside of the operation of the gasoline stations took the dipstick readings.

Even if all these accounting procedures are followed strictly, the potential for gasoline theft would remain. Gasoline could be pumped into an unauthorized vehicle and be recorded as being pumped into a City vehicle. After Central Shops installs its new information system next year, it will be possible to compute miles per gallon for each car. If more gas is reported to a car than it actually receives, extraordinary miles per gallon rates for that car would be reported in the new information system. The Water Department was able to detect gasoline being stolen by one of its employees who pumped gasoline into his own car and recorded it as going to a Water Department vehicle. The Water Department's accounting system brought the high miles per gallon rate for that vehicle to management's attention. However, the Water Department does not maintain accounts for gas by comparing disptick readings and gasoline pump meter readings against the amount of gas delivered to employees cars. If the Water Department employee did not make any recording at all of the gasoline that was pumped into his private car, the stolen gasoline would not have been easily detected because the miles per gallon report would have been normal.

CONCLUSION

The dispensing of City gasoline does not have sufficient accounting control or security procedures for the prevention and detection of theft.

RECOMMENDATION

We recommend the City departments operating gasoline pumps take the following actions:

-Prohibit privately-owned vehicles from City facilities that have operating gasoline pumps.

-Institute strict accounting control procedures for the dispensing of City gasoline.

-Have the fuel pumps inspected and certified for accuracy.

BENEFITS/SAVINGS

Implementation of these recommendations should improve the protection of the City's gasoline supply from theft.

CITY VEHICLES SHOULD NOT BE DRIVEN TO EMPLOYEE'S HOMES FOR OVERNIGHT STORAGE, SAVING APPROXIMATELY $73,000 PER YEAR.

According to a July, 1978, survey by the Mayor's Office, 282 out of 580 City vehicles including Muni Railway, Water Department, and Hetch Hetchy vehicles are driven home by City employees for storage each night. With little exception, these cars are taken home because there are no City facilities conveniently available in which the cars can be stored. However, City cars driven by City Hall personnel can be stored in the garage beneath the Department of Public Health office building as we recommend in our finding concerning low mileage automobiles (see pp. 9-13). Other departments have adequate storage space available at their own facilities or those of another agency.

Because there are so many City automobiles driven to employee's homes, and because a large portion of these cars are taken home for storage, a clear workable policy has never been established as to what is allowable cause (justification) for driving City cars home for reasons other than storage. A reasonable policy would enable employees to drive a City car home under the following conditions:

- An employee who is on call for work after hours where the nature of the work requires the use of a City car.
- An employee who must leave prior to 8 o'clock in the morning for an appointment on City business away from the normal place of work.
- An employee who returns from an appointment on City business after 6 o'clock in the evening or on a weekend.

Currently the Administrative Code contains general provisions restricting the use of City-owned vehicles--Section 4.11(a) follows:

> Vehicles owned by the City and County and assigned to, or under the jurisdiction of, any department of the City and County, shall be used only in the discharge and transaction of municipal business. No officer or employee of the City and County shall use any vehicle owned by the City and County and assigned to or under the jurisdiction of a department of said City and County without the consent of the head of such department.

From our survey of City automobile operations (conducted during August and September, 1978), we estimate that 139 City automobiles accumulated an additional 235,993 miles while being driven to employee homes for overnight storage--an average of 1,698 miles per car per year. We estimate that the total additional mileage accumulated on City vehicles while being driven home approximates 478,836 miles per year. Using the average cost of operation for City automobiles during 1977-78 of 15.4¢ per mile[6], employees driving City cars for the purpose of commuting to and from work have cost the City at least an additional $73,000 per year.

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[6] Computed using actual rather than average miles driven as used for the computation on page 7.

CONCLUSION

Adequate space is available to store City automobiles after working hours. Therefore, City automobiles should not be driven to employees' homes unless they are needed for City business after the normal working day.

RECOMMENDATION

We recommend that the Board of Supervisors amend the Administrative Code of the City establishing regulations restricting employees from driving City vehicles home.

SAVINGS

Implementation of this recommendation will save at least $73,000 annually or more as the cost of operating a City automobile increases.

CENTRAL SHOPS' MECHANICS PERFORMANCE SHOULD BE MEASURED AGAINST ACCEPTED INDUSTRY STANDARDS.

The automobile maintenance and repair industry has commonly accepted minimum standards for the performance of repair and maintenance work done on cars. These standards or flat rates are listed in shop guides prepared by automobile manufacturers and others. The flat rates are the maximum time periods a journey level automobile mechanic would need to perform a specific task. Flat rates are often used for billing and accounting purposes in private industry. Mechanics are often not paid for work done beyond the standard flat rate maximum. The City's mechanics working for Central Shops do not work under performance standards. A flat rate manual is not used by Central Shops' managers. Therefore it is not known whether or not the City's automobile mechanics are performing up to acceptable minimum industry standards.

The current method used to account for mechanic work does not provide the necessary information which can be used to compare a mechanic's performance to flat rate standards. For example, the work done is not described in sufficiently specific terms--"repaired brakes" does not describe what work was done to repair the brakes. The mechanics employed by Central Shops charge their time to a specific vehicle. However, we witnessed mechanics working on several vehicles simultaneously, moving from one vehicle to the next, and several mechanics working on one vehicle. Mid-day breaks and idle time between repairs are included in vehicle repair time and charged to the departments. Thus, the combination of not being able to determine the exact nature of the work performed, together with the inaccuracy of the time recorded for the work, makes it impossible to judge the performance of the Central Shops' mechanics against other competitive shops for a comparable work product.

During July, 1979, Central Shops will begin to use its new Automated Cost Accounting and Recording System (ACAR). Although ACAR will provide more specific information about vehicle repairs, the new information will not be used to compare the mechanics' performance against the flat rate. Mr. Flaherty, Central shops Superintendent, has stated that he currently uses flat rate standards only for accident repair work and random spot checks of mechanics' work. Eventually, some full-time performance standard must be adopted by Central Shops for the City's new Financial Information and Resource Management (FIRM) system. Accounting for actual performance against pre-determined work measures (productivity measures or work standards) will serve these fundamental organizational purposes:

- It serves an administrative function by giving the City's managers and executives an indication of how well their employees have performed.
- It is informational in that employees are evaluated on their work performance. It also outlines employees' strengths and weaknesses.
- It is motivational in that Central Shops' employees could use flat rate standards as achievable goals.

CONCLUSION

The automobile repair industry has readily available, generally accepted performance standards. However, Central Shops does not use performance standards to judge and motivate the productivity of its mechanics.

RECOMMENDATION

We recommend that the Superintendent of Central Shops use generally accepted performance standards, such as those contained in flat rate manuals, to judge the productivity of the Central Shops' automobile mechanics.

BENEFITS

Implementation of this recommendation will:

- Form a basis for the Central Shops' adoption of FIRM's performance accounting system.
- Provide a standard whereby Central Shops' job costs can be compared with those in private industry.
- Inform the Central Shops' mechanics of their performance and motivate them towards a performance goal.

THE CITY AUTOMOBILE FLEET EXPERIENCES AN AVERAGE OF 14% DOWNTIME. INSTALLING SYSTEMS OF PREVENTIVE MAINTENANCE AND INSPECTION, SCHEDULED REPAIR AND QUALITY CONTROL WILL REDUCE THIS EXCESSIVE DOWNTIME SAVING $176,514 IN VEHICLE REPLACEMENT COSTS.

According to automotive fleet management experts[7], vehicles should not experience over 5% downtime annually for service and repair independent of the age of the fleet. Downtime is the time a vehicle is required by operations and is out of service for maintenance. We conducted a vehicle usage survey during August and September, 1978, in which every City driver maintained a log of their usage of City cars. (The survey excluded Police and Fire vehicles.) In reviewing the results of our survey, 258 vehicles of the 429 sampled provided us with usable downtime data. Because all departments did not provide us with standardized vehicle usage data, we took a weighted[8] average of the number of days that each vehicle was reported to be at Central Shops for repair. We found that during August, 1978, these 258 vehicles experienced an average of 14% down time. We estimate the 14% of a downtime to be a minimum average rate because we did not calculate downtime for any vehicle beyond the reporting period.

In reviewing individual department fleet downtime, we found that, in the Department of Social Services, 39 automobiles experience a 53% downtime rate, or an average of 12.1 days out of 23 days surveyed. The time waiting for services and the time used to complete repairs to Department of Social Services vehicles included 14 days to repair a window, 18 days to repair a horn, 4 to 6 days to complete a routine tune-up, 10 days to repair a radiator, 23 days to service and repair a manual transmission.

Additional examples of excessive downtime were found with cars used by the Department of Public Works Traffic Division and the Laguna Honda Hospital (Department of Public Health). The Traffic Division's 10 automobiles were "down" for repairs at Central Shops 3.4 days out of 15 days, or 23% of the time. The three vehicles assigned to Laguna Honda Hospital averaged 27% downtime during the study period. One of these vehicles was down for 10 working days due to faulty tires, another was down for 7 working days for general servicing.

Repairs conducted on police vehicles are routinely given priority over the repair of other City cars. Therefore, the rate at which police cars are out-of-service for repairs is the lowest downtime rate of all the City's fleet. We analyzed the Police Department's vehicle availability records and found that Police vehicles were down 9% of the time over a 9-month period from October, 1977, through July, 1978. This rate is nearly twice the average rate (5%) which is standard for vehicle fleets.

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[7] Bob Edwards, Editor and Publisher, California Fleet News; State of California Fleet Administrator (Retired).
J. H. Coburn, Vice President, Gelco Leasing Company.
Ronald W. Jensen, Principle Consultant; Graves, Jensen and Associates; Equipment Management Consultants.

[8] We calculated a "weighted" average because of the varying number of vehicles and varying number of days reported by each department.

Because there is no centralized fleet management, neither Central Shops nor individual departments take responsibility for the cost-effectiveness or the condition of the City's automobiles fleet. The responsibility for determining the timing and the extent of repair for each City vehicle is divided between the operating department and the Central Shops. The Central Shops' managers attribute excessive downtime to the unavailability of parts, personnel shortages during peak service times, and the time needed to determine whether a vehicle is serviceable. Our review of standard practices for vehicle fleet maintenance indicates three maintenance management systems, absent from Central Shops which, if instituted, would reduce the downtime rate to normal levels for the City's vehicles. These management systems are as follows:

I. Central Shops does not systematically service the City's vehicles according to the manufactures' suggested maintenance programs. Central Shops has a system to perform a periodic (every 3,000 miles) oil change and lubrication for the City's automobiles. The drivers are responsible for bringing their cars in for this periodic maintenance when the vehicles reach the mileage posted on a sticker that Central Shops' personnel place on each vehicle's speedometer. However, Central Shops' staff do not follow up the preventive maintenance program to identify autos which have not been serviced within the specified time. The monthly fuel reports used to bill departments for fuel consumption are not checked for auto mileage which would indicate the specific cars that have not received servicing as required.

Central Shops could develop a more complete maintenance procedure which would conform to the manufacturers' suggested maintenance program. At the time of periodic oil change and lubrication, cars could be fully inspected and any maintenance procedure performed as needed. In our survey, 74% of downtime was attributed to repairs that took vehicles out-of-service for more than 2 working days. A complete routine scheduled maintenance procedure could reduce the amount of unexpected, unscheduled, and expensive repair work which now comprises the major proportion of Central Shops' activities.

II. Both maintenance and repair work is done without a scheduling or appointment procedure. Work is generally done on a first-come first-serve basis with the exception of the City's emergency vehicles which are given priority. Cars are driven or towed to the Shops when a vehicle malfunction comes to a driver's attention. Drivers are not encouraged to call the Shops and schedule an appointment for work to be done. Central Shops does not give an expected time for repair work to be completed, but, instead cars are worked on as time permits.

An appointment system can guarantee that a vehicle will be worked on (with few exceptions) the day scheduled for maintenance or repair. After maintenance procedures are performed within a specific time frame, in most instances the auto can be returned to the driver within a day. The time required for each type of repair work could be estimated for scheduling. As better preventative maintenance is performed, the required repairs should become increasingly less critical and allow for efficient scheduling and less downtime.

III. Central Shops does not have a quality control procedure. No records are kept of vehicles returned in order to have repairs redone due to faulty work. Central Shops does not have a procedure for periodically inspecting repair work in order to insure that it has been done correctly. Thus, there is no documentation to refute the continuous complaints by City departments concerning the alleged poor quality of repairs performed by Central Shops. A system of periodic work inspection and a data collection for work returned because of faulty repair work could be instituted without significant costs. Implementing these management systems would increase the quality of repairs and maintenance and reduce vehicle downtime.

It was not possible to determine the cost of excessive downtime to the City from our survey of Central Shops' or other departmental records. The cost of downtime is absorbed by the operating departments in a least two ways: (1) by postponing or displacing work until the vehicle is repaired, or (2) by budgeting for extra vehicles to use during the interim. An improved system for vehicle maintenance could reduce the downtime rate to the 5% industry standard. Reducing the downtime rate from 14% to 5% will reduce the number of vehicles required for City departments by 39 automobiles. As the size of the City fleet is reduced, the backlog of vehicles to be repaired should be minimized, and a scheduled preventive maintenance program will be more easily implemented.

CONCLUSION

The city-wide downtime rate of 14% is excessive. This excessive downtime reduces efficiency of City operations, and results in a larger number of vehicles than would otherwise be needed. According to fleet management experts, vehicles should not experience over 5% downtime annually for service and repair. Given this base for comparison, the City's vehicle fleet exceeds the acceptable norm by two to ten times. There are at least three procedures which, if instituted by Central Shops, could significantly reduce the downtime of the City automotive fleet.

RECOMMENDATIONS

We recommend that the Central Shops take the following actions:

-Institute a mandatory vehicle maintenance and inspection procedure conforming to the manufacturers' recommendations.

-Institute a work scheduling and appointment procedure.

-Institute a quality control system.

-Establish a performance standard whereby City vehicle downtime would be maintained below 5%.

-Eliminate 39 vehicles from the City fleet through attrition as the recommendations above are implemented.

SAVINGS/BENEFITS

Implementation of these recommendations will reduce the downtime of City vehicles. Reducing vehicle downtime will both increase the productivity of the various City Departments as the required vehicles are available more often to perform City work and reduce the need to replace City vehicles used while a car is in repair. Reducing the City fleet by 39 vehicles will save the City approximately $176,514 in vehicle replacement costs as our recommendations are implemented.

CITY EMPLOYEES ARE REIMBURSED AT 18¢ PER MILE FOR USING PRIVATELY-OWNED AUTOMOBILES ON OUT-OF-CITY TRIPS ON OFFICIAL BUSINESS. IF CITY AUTOS, COSTING AN AVERAGE 13.44¢ PER MILE, WERE USED, THE CITY COULD SAVE OVER $10,000 PER YEAR.

The average fixed cost (depreciation and insurance) of operating a City automobile during 1977-78 was $454.04 per year. The average variable cost (maintenance, petroleum products, and tires) was 10.99 cents per mile for 1977-78. The total average cost per mile of operating an auto will decrease the further it is driven as the fixed costs can be spread over more miles. During 1977-78, the average City auto needed to be driven at least 25 miles per day in order for the operating cost to equal the cost of reimbursing an employee for the use of a private automobile at 18 cents per mile.[9] Therefore, any City vehicle driven less than an average of 25 miles per day is not economical to operate.

San Francisco's land area is approximately seven miles by seven miles, or 45 square miles. Thus it is difficult for a City employee to drive a car over 25 miles in a day, stay within the City limits, and still be able to get the required City work done. On the other hand, it is difficult for an employee to have an appointment beyond the City limits and return without driving over 25 miles.

During the 1977-78 fiscal year, City employees were reimbursed $42,812 for 5,126 trips, averaging 46.4 miles each, outside the City. For the 1977-78 fiscal year, the total average cost to operate a City automobile was 15.4¢ per mile[10] (including both fixed and variable costs). The City could have saved $6,184 (14%) if City-owned cars were used rather than privately-owned vehicles for trips out of the City. After subtracting the high cost of operating the automobiles recommended for elimination in our recommendation to share more City cars, the average cost per mile for the fleet was 13.44¢ per mile (6.4¢ less than the 18¢ per mile reimbursement rate). If this more efficient fleet were used rather than privately-owned cars, the realized savings would have been $10,846 in the 77-78 fiscal year.

CONCLUSION

-Driving on City business outside of the City limits should be done in City-owned automobiles. Employees should be encouraged to drive a privately-owned vehicle while on City business within the City.

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[9] The 18 cents per mile reimbursement rate is set according to the provisions of Article IV, Chapter 10, of the Administrative Code.

[10] Computed using actual rather than average miles driven as used for the computation on page 7.

RECOMMENDATIONS

-We recommend that the Board of Supervisors amend Article IV, Chapter 10, of the Administrative Code to prohibit the authorization and compensation of the use of privately-owned automobiles outside of the limits of the City and County of San Francisco unless a City car is unavailable.

-We further recommend that departmental managers encourage their employees to use privately-owned automobiles for official business within the City.

SAVINGS

Implementation of these recommendations will save the City over $10,000 per year.

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SAN FRANCISCO VEHICLE FLEET
as of January, 1979

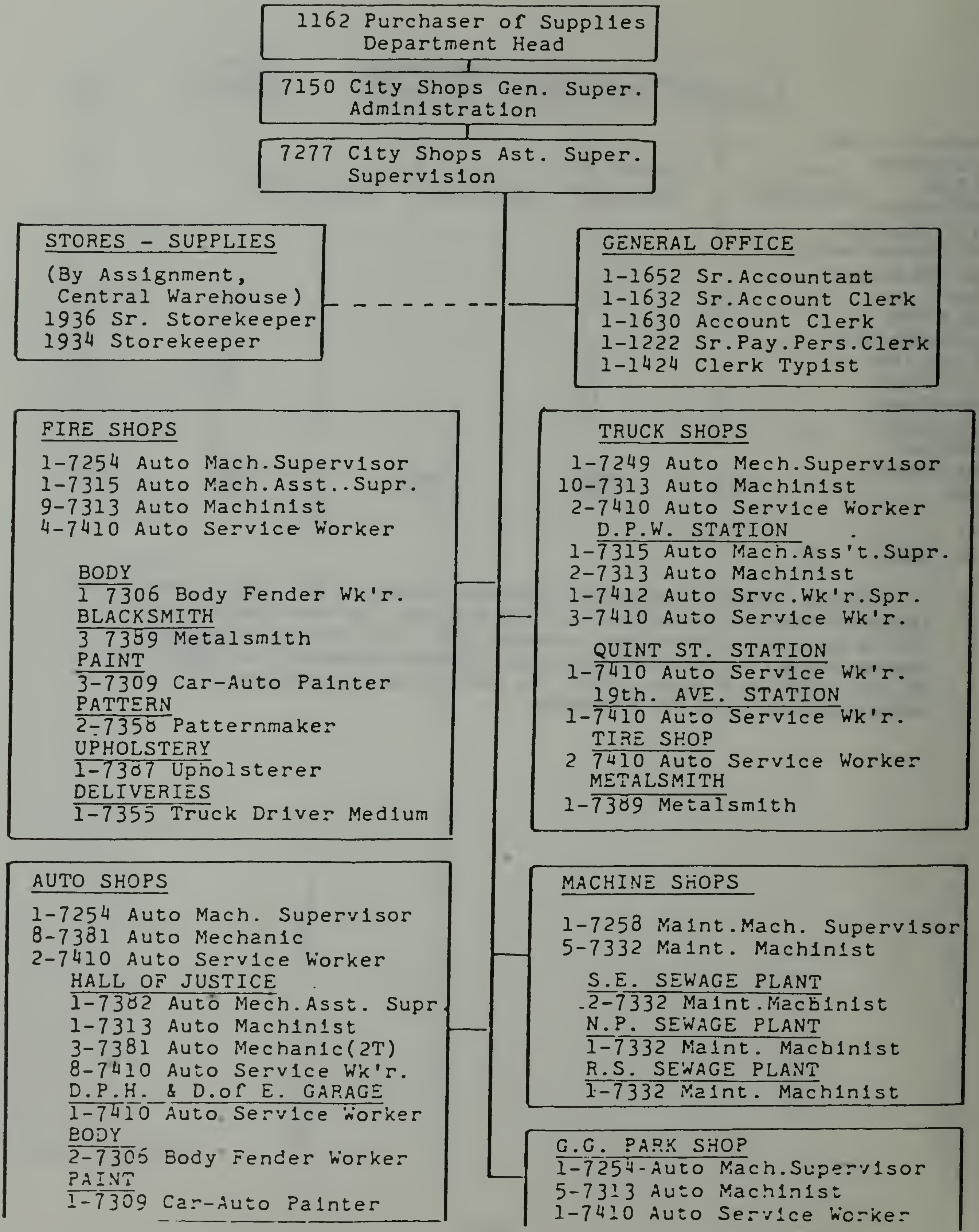
	Automobiles	Vans/Trucks	Ambulances & Motorcycles	Special Equipment	Total
Adult Probation	8	-	-	-	8
Art Commission	-	-	-	6	6
Assessor	2	-	-	-	2
City Attorney	2	-	-	-	2
City Planning	2	-	-	-	2
Civil Service	1	-	-	-	1
Controller	1	-	-	-	1
Emergency Services	3	1	-	1	5
District Attorney	33	1	-	-	34
Fire Department	58	-	-	182	240
Model Cities	1	13	-	-	14
Police Dept.	399	26	269	7	701
Public Defender	4	1	-	-	5
Social Services	44	2	-	-	46
Sheriff	34	8	-	18	60
Bd. of Supervisors	1	-	-	-	1
Adult Probation	18	3	-	1	22
Log Cabin	-	2	-	4	6
Hidden Valley Ranch	1	1	-	-	2
Academy of Sciences	-	6	-	-	6
Coroner	2	3	-	2	7
Electricity	7	21	-	11	44
Public Admin.	3	-	-	-	3
Real Estate	1	-	-	-	1
Auditorium	-	-	-	4	4
Registrar	-	-	-	1	1
Tax Collector	1	5	-	-	6
Weights & Measures	2	6	-	1	9
Purchasing	3	2	-	1	6
Central Shops	3	16	-	11	30
Architecture	8	-	-	-	8
Bldg. Inspection	55	-	-	-	55
Bldg. Repair	15	91	-	49	155
Engineering	16	7	-	1	24
Sanitary Engr.	7	5	-	-	12
General Office	1	-	-	-	1
Personnel	3	-	-	-	3
Water Pollution	4	4	1	19	28
Sewer	6	13	-	99	118
Street Cleaning	6	47	4	63	120
DPH - Admin.	10	-	-	-	10
Food & Santry.Insp.	29	1	-	-	30
Health Centers	5	-	-	-	5

	Automobiles	Vans/Trucks	Ambulances & Motorcycles	Special Equipment	Total
Emergency Centers	2	0	15	-	17
Laguna Honda	3	6	1	4	14
S.F.G.H.	11	7	3	1	22
DPH - Admin.	2	-	-	-	2
SFGH - Psychiatric	3	5	-	-	8
DPH - Mental Health	1	-	-	-	1
Fine Arts Museum	-	4	-	-	4
Library	1	6	-	-	7
Rec. & Park	22	73	-	601	696
Candlestick Park	-	4	-	13	17
S.F. Sch. Dist.	7	52	-	21	80
City College	4	12	-	29	45
Street Repair	7	14	-	91	112
Engineering	3	21	-	9	33
Road Fund	10	1	-	-	11
Tree Planting	-	15	-	33	48
Totals	875	504	293	1,283	2,955

Note:

Public Utilities Commission, Municipal Railway, Port, Airport, and Water Department vehicles are excluded from this inventory. The above table represents the fleet as reported by Central Shops in January, 1979. The General City fleet in our study does not include Fire, Police, SFUSD, and City College vehicles,which reduces the size of the fleet to 407 as of January, 1979. The vehicle inventory from June, 1978, which we analyzed in detail, totals 429 automobiles.

CITY & COUNTY OF SAN FRANCISCO
PURCHASING DEPT. CENTRAL SHOPS
ORGANIZATION CHART



1162 Purchaser of Supplies
Department Head

7150 City Shops Gen. Super.
Administration

7277 City Shops Ast. Super.
Supervision

STORES - SUPPLIES
(By Assignment,
Central Warehouse)
1936 Sr. Storekeeper
1934 Storekeeper

GENERAL OFFICE
1-1652 Sr.Accountant
1-1632 Sr.Account Clerk
1-1630 Account Clerk
1-1222 Sr.Pay.Pers.Clerk
1-1424 Clerk Typist

FIRE SHOPS
1-7254 Auto Mach.Supervisor
1-7315 Auto Mach.Asst..Supr.
9-7313 Auto Machinist
4-7410 Auto Service Worker

BODY
1 7306 Body Fender Wk'r.
BLACKSMITH
3 7389 Metalsmith
PAINT
3-7309 Car-Auto Painter
PATTERN
2-7358 Patternmaker
UPHOLSTERY
1-7387 Upholsterer
DELIVERIES
1-7355 Truck Driver Medium

TRUCK SHOPS
1-7249 Auto Mech.Supervisor
10-7313 Auto Machinist
2-7410 Auto Service Worker
D.P.W. STATION
1-7315 Auto Mach.Ass't.Supr.
2-7313 Auto Machinist
1-7412 Auto Srvc.Wk'r.Spr.
3-7410 Auto Service Wk'r.

QUINT ST. STATION
1-7410 Auto Service Wk'r.
19th. AVE. STATION
1-7410 Auto Service Wk'r.
TIRE SHOP
2 7410 Auto Service Worker
METALSMITH
1-7389 Metalsmith

AUTO SHOPS
1-7254 Auto Mach. Supervisor
8-7381 Auto Mechanic
2-7410 Auto Service Worker
HALL OF JUSTICE
1-7382 Auto Mech.Asst. Supr.
1-7313 Auto Machinist
3-7381 Auto Mechanic(2T)
8-7410 Auto Service Wk'r.
D.P.H. & D.of E. GARAGE
1-7410 Auto Service Worker
BODY
2-7306 Body Fender Worker
PAINT
1-7309 Car-Auto Painter

MACHINE SHOPS

1-7258 Maint.Mach. Supervisor
5-7332 Maint. Machinist

S.E. SEWAGE PLANT
2-7332 Maint.Machinist
N.P. SEWAGE PLANT
1-7332 Maint. Machinist
R.S. SEWAGE PLANT
1-7332 Maint. Machinist

G.G. PARK SHOP
1-7254-Auto Mach.Supervisor
5-7313 Auto Machinist
1-7410 Auto Service Worker

City and County of San Francisco **Purchasing Department**

June 29, 1979

THROUGH Roger Boas, Chief Administrative Officer

Mr. Harvey Rose
Budget Analyst
Board of Supervisors
1182 Market Street
San Francisco, California 94102

Dear Mr. Rose:

We examined the report entitled "Review of the Operations of the San Francisco Automotive Fleet and the Central Shops Division of the Purchasing Department" dated June 1979.

Your decision to accept our suggestion that the original study of automobile use be expanded to include our Shop operations is appreciated.

The report correctly points out that the City fleet has drastically increased in size over the past years without any compensating increase in manpower or facilities to repair and maintain the large number of vehicles now in service.

It also correctly points out that the Central Shops have been a major contributing factor toward the relatively low cost of operating City vehicles.

We searched unsuccessfully for references to certain fleet problems which we consider to be of major importance. We saw no discussion of the outdated and inefficient repair facilities, the difficulty of maintaining personnel at the authorized level due to a City wage scale well below that of private industry. There was no discussion of the problems due to lack of adequate vehicle storage at the Central Shop.

The report seems to favor the new accounting system which the Shop administration has designed. There is no doubt that it will solve many of the problems we presently have.

We are making no attempt to respond to these areas of the report concerning insurance and accident prevention which are not within our areas of responsibility.

We have some grave concerns with some of the other conclusions stated in the report; but due to the time constraints imposed upon us in formulating a reply to the audit, we will not attempt to respond in the necessary detail.

Very truly yours,

JOSEPH C. GAVIN
Director of Purchasing and Services

JCG/et

(415) 558-5026 **Room 270, City Hall** **San Francisco 94102**